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ABSTRACT

The purpose of this report is to describe the KISS (Keep It Sweet and Simple) system of photography for accurately and rapidly copying genealogical and historical records on 35mm film, developing the same and using the resulting negative roll in a regular microfilm reader for immediate viewing. The basic requirement of the system is that it be simple to use, without complicated lights or accessories, positive in its results, and aside from the initial camera investment, very economical in operation. A simple method of personal microfilming is described wherein records are copied on 35 mm film, the film developed and the resulting negative roll read on a conventional microfilm reading machine. A 35mm single-frame camera is used with fast, wide-latitude film and "available light." Development and handling suggestions are given. (Author)

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Special Report - KISS

A Practical System of Photography for Genealogists and Historians

The purpose of this report is to describe the KISS[1] system of photography for accurately and rapidly copying genealogical and historical records on 35 mm film, developing the same and using the resulting negative roll in a regular microfilm reader for immediate viewing.

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The basic requirement of the system is that it be simple to use, without complicated lights or accessories, positive in its results, and aside from the initial camera investment, very economical in operation.[2]

After careful experimentation and investigation, we have found that the most suitable instrument currently available in filling the above requirement is the Olympus Pen FT half-frame SLR camera. It is smaller, lighter and easier to handle than a conventional full frame SLR. It easily fits into a pocket or a handbag. It takes twice as many exposures on a standard 35 mm roll of film (72-76 exposures on a regular 36 exposure roll) and the resulting format is much more suitable for the genealogical application. The SLR feature (Single Lens Reflex) provides direct viewing through the taking lens instead of through a separate finder with its attendant parallex problems. In other words, "what you see, you get." It is provided with its own light metering system for accurate exposures. It focuses to within 14" (about 4"x6" field size)without attachments. Thus the basic FACE (focus, aperature (light), composition and exposure) requirements of good photography are easily achieved without supplemental equipment. It is a versatile instrument finding a full range of application other than the specified genealogical purpose.[1a]

In our investigation we first tried a regular full-frame 35 mm SLR camera (Mamiya Sekor 500 TL). With little instruction and no prior photographic experience other than the usual "snap-shot" variety, Miss Gloria Smith, a BYU genealogy student, photographed a number of deed records at the Washington County, Pennsylvania, Court House, during a Christmas vacation. On her return, the film was developed as a negative roll and then projected through a conventional microfilm reader. The photographic results were fine, except that the size of the projected regular 35 mm full-frame (36x25mm±) exceeded the screen size of the conventional microfilm reading equipment, which we subsequently learned is based upon an approximate 25x25mm square format. The same situation was encountered when we attempted to make a direct record print (8"x10" positive) from a 3M Microfilm Printer-Reader (3M Filmac 400B). The projected image exceeded the screen size when the widest-angle lens (12.05x 36 mm focal length) available in the BYU micro-

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1. KISS = "Keep it sweet and simple." 1a. See also page 5 of this report.

2. Initial camera investment with recommended f/1.8 38mm lens = $135-$160. Film and development cost, about $1.50 for 72-76 exposure roll = about 2¢ each exposure. This can be cut about in half if you use bulk film and do your own development. Positive enlargements (approx. 8x10") using microfilm printer readers (Xerox or 3M) about 10¢ to 15¢ per print.

film Reading Room was used. An investigation was then made to determine if a wider-angle lens could be obtained for the reader-printer. It was determined that one was available but its application would require a basic modification in the reader-printer therefore the BYU Library was not receptive to the change. (BYU is Brigham Young University, Provo, Utah).

The discovery that the popular 35 mm regular full-frame format was not entirely suitable for our genealogical record copying purpose and subsequent projection on a microfilm reader came as a surprise as the microfilm is basically a 35mm film operation.[3] Nevertheless, the 35mm half-frame format solved our dilemma and in so doing provided a number of additional advantages aside from the film saving heretofore mentioned. For example, the format is vertical rather than horizontal. Since most documents have this format, and it is easier to handhold the camera and operate it in its normal horizontal position, the advantage thus obtained is obvious. Also, as will be seen in the format diagram below, the half-frame proportion is closer to the 8 x 10 enlargement size preferred for documentation, and therefore little cropping is required when the half-frame is enlarged, thus the smaller negative size is not as disadvantageous as might first appear. In addition, it was found that the half-frame size is the same as that used in film strips for educational and business purposes, thus enabling the use of film strip projectors as reading machines when conventional microfilm readers are not available. The half-frame pictures can likewise be projected in a regular 35mm slide projector or viewer (with a little adaptation where rolls are used) thus readily enabling "home" viewing. (Using this method, reductions of over 12X are not recommended).

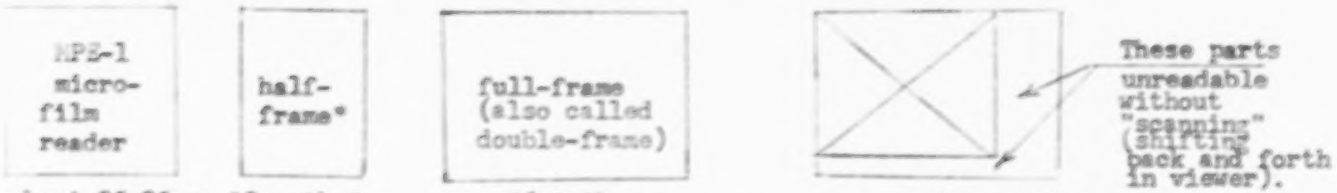

Image sizes for 35mm exposed frames.

x = reader-printer coverage on 35mm full-frame exposure using 12.05 Wide-angle lens, (about same as 1/2 frame turned 90°).

* also called single-frame. (This is motion picture and film strip size).

Fig. 1

The film used in our investigation was Tri-X Pan (Eastman) 36 Exposure with an ASA film rating of 400. This is an exceptionally fast film enabling good work at "available" light levels.[3a] While Miss Smith took along a small portable auxillary lighting unit, she found she didn't need it - nor have we in any of our experiments. While some writers[4] recommend a finer grain, slower film such as Microfile, as used in commercial microfilming (ASA 32), we would not suggest this for private use as it would require 12.5 times as much light and thus require auxillary lighting such as flood, strobe or flash. For almost all applications in our KISS system, you will find that the fast Tri-X film will provide enough contrast for readable work. The current price of Tri-X Pan is about $1.00 per roll plus a charge of 35¢ to 60¢ for drug store or photo shop developing. One word of caution, however, if you have someone develop your film for you, be sure you specify that you want it returned <u>uncut - as a roll.</u> Otherwise, the processor may cut it into small strips making its use in a microfilm reader very inconvenient.

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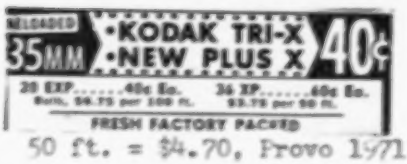
3. The regular full frame 35mm camera <u>can</u> be used in this application. However, we suggest that "verticle" exposures be made (text across the narrow width of the film, or that two pages (if a book, etc.) be exposed at a time thus, in effect, obtaining half-frames from the full-frame format.

3a. Tri-X is also a "wide latitude" film, so exposure is not extremely critical.

While "drug store" processing is all right initially, you will soon find that with a small expenditure (about $3.95 for a tank such as a Yankee Clipper, and $2.00 for chemicals, etc.) you can develop your own films. This will be a great convenience, especially if you buy your film in bulk and load your own magazines. In addition to saving money, you can expose and develop a few frames at a time without waiting to finish a whole 40 or 72 exposure standard roll.[4a] This procedure also has the advantage of being able to change to a different type of film should technical requirements dictate. The development of your film is a simple process and doesn't require the use of a darkroom (except that the film has to be loaded in the tank in the dark.[5] Typical prices for bulk film and a popular loader are shown in figure 2. below.



50 ft. = $4.70, Provo 1971

16 half-frames = about 1 ft of film; hence 50 feet = approximately 800 exposures (about 1600 in a 100 ft. roll of bulk film). However, you should figure about 20% less due to loading waste.

Fig 2.

For our record making purpose, the film is developed as a negative roll and read directly on a microfilm reader using the same basic reading technique as that employed with regular commercial microfilms. Should a record copy be desired, the film is then transfered to the 3M reader printer and a positive obtained at a cost of about 15¢ for an 8" x 10" "print." Other types of reader printers are available such as the Xerox type which will provide print-outs at 10¢ or less per 8 x 10. However the Xerox recently installed in the BYU Microfilm Room was set-up for positive to positive reproduction. Hence, negatives are reproduced as negatives - a not very satisfying result on Xerox equipment. We accordingly recommend the 3M, or similar reversal equipment.[6]

Genealogical and historical records cover a wide range of materials and, as interesting aspect of our investigation, we copied a number of records directly from the projected images in a microfilm reader. (See Figure 3.) We found the light adequate but, as it was impossible to position the camera directly over the projected image, we focused on the areas of prime interest. A file folder or piece of cardboard to change the position of the projected image was also helpful. Our files contain several examples of this technique. While all items were not in equal focus, the results were readable and satisfactory.[7]

Fig. 3.

4. E. K. Kirkham, Photography in Genealogy, Deseret News Press, 1959, p.40-43. Excellent on films and methods.

4a. We suggest you load your magazines full (72 exposures). Then, if only a few frames are used (1 roll = 18), the camera can be opened (in the dark) and the exposed part cut, removed and placed in the development tank for processing - the remaining film still being usable.

5. Eastman Kodak Booklet AJ-2, Basic Developing, Printing, Enlarging (75¢), provides easy instructions for anyone new to the field (highly recommended).

6. Or you can have a photoshop make prints from your negatives. Better yet, do your own at a savings of 50-80%. An enlarger such as Vivatar is available for about $90. Your negative rolls can be spliced together and stored on, or viewed from a standard microfilm reel (which just fits in a 50 ft bulk film can).

7. The Pen FT has a depth-of-field preview button to help you visualize the sharpness of focus under such conditions.

With the KISS system, it is easy to make your own private microfilms, copy shelved books for reference, photograph displays, posters, people, buildings, gravestones, monuments, etc. It is important, however, to "title as you go," to use an amateur movie making expression. Positive identification of source, time, etc., can be easily made by slipping a piece of paper, with the identifying information, within view of the camera lens. This is highly recommended.

As heretofore indicated, our investigation was made using the one camera, one film, "available light" technique. Generally the camera was hand held as we found that most people initially unskilled in photography, would tend to use "snap-shot" methods in making their own private records. However, as skills are developed, the addition of a few items such as a tripod or copy stand, close-up lenses, lights, and the possible use of more specialized film will enable results of truly professional quality.[8] In fact, there is almost no limit to the versatility of the basic Pen FT system with its array of lenses, filters, magnifiers, etc., one of the latest being a motor drive and 500 exposure (33 ft) magazine arrangement shown in figure 4. Modern Photography tests on the fine 38mm f/1.8 lens provided as standard equipment on the Pen FT are also shown. Detailed information and a demonstration can be arranged in most photo stores. However, if your purpose is copying records within the scope of this report, be careful that you are not talked into a more popular full-frame 35mm SLR model. Keep it sweet and simple.[9]

NEAT AND TRIM, *the new Olympus Pen motor drive system is a good match for the FV and FT half-framers. It's shown with the 500 exposure bulk back attached. Great!*

Basic camera size without above attachments is 5" long x 2-3/4" high. The Pen FT and Pen FV are the same except that the FV does not have a built-in light meter.

38mm f/1.8 Zuiko Auto-S		
Aperture	Center Sharpness	Edge Sharpness
1.8	Good	Very Good
2	Good	Very Good
2.8	Very Good	Very Good
4	Very Good	Excellent
5.6	Very Good	Excellent
8	Excellent	Excellent
11	Excellent	Excellent
16	Good	Excellent

The basic f1.8 lens is fast enough for our purposes. It is a little more precise and less costly than the f1.4 and f 1.2 lenses also available.

Fig. 4.

8. Kirkham's book, Photography in Genealogy, op. cit. is recommended for additional helps in copying information for genealogical and historical research purposes. A later book - Simplified Genealogy for Americans, (Deseret Book Co, 1968), p. 37-40 - provides additional helpful information, including instructions for making a simple "homemade" lighting system.

9. The selection of a camera is often a confusing process to a person with little experience, particularly if he has indefinite needs. However, if the main purpose is copying records as described in this report, the selection is greatly simplified since, to the best of our knowledge, there is only one suitable SLR half-frame camera currently available (the Olympus Pen FT, together with the FV meterless model and earlier Pen F SLR's). Mention should, however, be made of the Konica Auto-Reflex Camera, a full-frame 35mm SLR which converts to half-frame with a flip of a switch. This shrinking of format, however, results in telephoto effect using the normal lens, thus making it difficult for our purpose. The main objection to half-frame cameras for all around use is the large quantity of pictures resulting, e.g. 72 color slides from one 36 exposure roll - really a "small" objection when our application is considered.

Olympus Pen FT

Report from
Modern Photography

MANUFACTURER'S SPECIFICATIONS: Olympus Pen FT half-frame 35mm eye-level single-lens reflex. LENS: 38mm f/1.8 40mm f/1.4 or 42mm f/1.2 Zuiko Auto-S with stops to f/16, focus to 15 in. SHUTTER: Metal rotary focal-plane with speeds from 1 to 1/500 sec. plus B, MX sync (at all speeds). VIEWING: Noninterchangeable eye-level prism with full focusing screen fine-focusing collar and microprism center. OTHER FEATURES: CdS cell circuit reads exposure measurement through the lens at full aperture, instant-return diaphragm, rapid-return mirror, depth-of-field preview button, self-timer.

Again Olympus has done right by half-frame enthusiasts. First, the answer to a half-framer's dream—a no-feature-left-off SLR with full lens interchangeability, focal-plane shutter and X sync at all speeds. Now a model of the 5-in.-long 2⅝-in.-high gem has a behind-the-lens meter with no increase in size and virtually no increase in weight. Moreover, you can make your exposure reading at full aperture and, compatibility be praised, every lens already made for the Olympus Pen F will work as well with the Olympus Pen FT metering system.

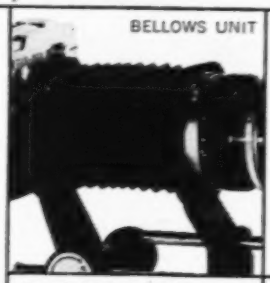
• • • • The frame counter has slightly larger numbers, although the counter still has numerals only for every four shots. X sync only has been replaced with both X and M.

The rest of the Pen FT and FV features are the same as the older Pen F as tested in MODERN in June 1964. You can expect superb performance, precision workmanship, pinpoint focus, very convenient operation, X sync at all speeds—all adding up to a most engaging, different-from-any-other SLR or half-framer, a camera which will satisfy the most critical of users.

OLYMPUS PEN FT WITH BEHIND-THE-LENS METER

(Also available as Olympus FV without meter for $20 less.)

BELLOWS UNIT



MICRO-SCOPE ADAPTER

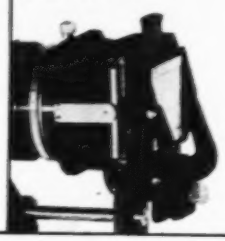
EYE CORRECTION LENS AND ADAPTER

EXTENSION RING SET

also close-up lenses

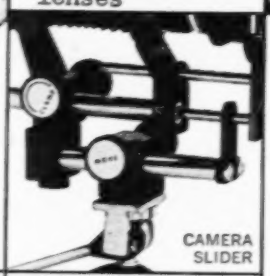
RIGHT ANGLE FINDER

SLIDE COPIER



PORTABLE COPY STAND

COPY STAND WITH LIGHTS



CAMERA SLIDER

COMPLETE RANGE OF OLYMPUS ZUIKO LENSES

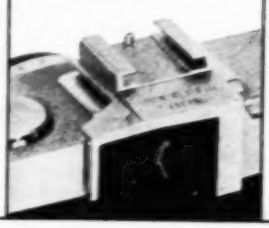
VIEWFINDER MAGNIFIER

RIGHT ANGLE MAGNIFIER

OLYMPUS 50MM-90MM AUTO ZOOM LENS

COMPARTMENT CASE

ACCESSORY SHOE



LENS MOUNT ADAPTERS

Focal length	Max. aperture	Angle of view	Full frame 35 equivalent
42mm H Zuiko Auto S	f/1.2	39 degrees	60mm
40mm G Zuiko Auto S	f/1.4	41 degrees	58mm
38mm F Zuiko Auto S	f/1.8	43 degrees	55mm
20mm G Zuiko Auto W	f/3.5	73 degrees	28mm
25mm E Zuiko Auto W	f/4.0	62 degrees	35mm
25mm G Zuiko Auto W	f/2.8	62 degrees	35mm
60mmG Zuiko Auto T	f/1.5	28 degrees	85mm
70mm F Zuiko Auto T	f/2.0	24 degrees	100mm
100mm E Zuiko Auto T	f/3.5	17 degrees	143mm
150mm E Zuiko Auto T	f/4.0	12 degrees	210mm
250mm E Zuiko T	f/5.0	7 degrees	360mm
400mm E Zuiko T	f/6.3	4 degrees	580mm
800mm Zuiko Mirror T	f/8.0	2 degrees	1150mm
50-90mm Zuiko Auto Zoom	f/3.5	19-34 degrees	70 to 130mm
100-200 Zuiko Zoom	f/5.0	9-17 degrees	143 to 236mm

Since the report was written (January 1971), production of the Japanese made Olympus Pen camera (which was recommended) has been discontinued. However, the same results can be achieved with regular double-frame cameras by photographing two pages of material at a time (side by side - comic arrangement).

If desired, the 35mm rolls can be converted to flat forms for easier storage and use by cutting the developed negative film into short strips and "jacketing" them. (Jackets consist of two very thin sheets of clear plastic cemented together at the top and bottom and a intervals across their width. The spaces between the cement lines form channels into which the strips of film can be inserted, thus converting the roll film strips into a form of microfiche. The resulting "unitized" flat form is easy to store and use. It can be filed flat - like a sheet of paper - in the project file folder).